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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/927,740	08/10/2001	Steven T. Mayer	NOVLP023/NVLS-459	7317

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BEYER WEAVER & THOMAS LLP
P.O. BOX 778
BERKELEY, CA 94704-0778

EXAMINER

VALENTINE, DONALD R

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 07/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/927,740

Applicant(s)

MAYER ET AL.

Examiner

Donald R. Valentine

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-38 and 40-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-22 and 24-37 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-7, 23, 38 and 40-60 is/are rejected.
- 7) ☒ Claim(s) 8-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claims 4-11, 13-15, 17-37 and 39-60 is withdrawn in view of the reference to Toyoda et al, previously of record.

Rejections based on this reference follow.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-3, 5-7 and 38 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Toyoda et al, previously of record.

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Toyoda et al show a plating cell (100A), a "workpiece" (substrate 5), and a plating fluid passing through a filter (12A) before contacting the substrate 5 (workpiece). The filter is made of material having pore size of between 1 to 200 um and appears to "create" a flow pattern, which apparently is "substantially" the same velocity across the entire surface of the filter 12A. (See col. 2, lines 61-68 and col. 7, lines 30-45). There is recited a flow rate which appears to define a "velocity". A volumetric flow rate is defined in the reference (Applicant's claims 13-15). (See Col. 8, lines 27-45). There is a cathode connection shown in Figure 1, (7) and an anode is described at (10) the latter requiring a connection for functionality.

The reference does not refer to a "diffuser membrane". The filter 12A appears to serve the same function as the claimed "diffuser membrane" because the reference removes bubbles, one of the objectives of applicant. The reference discloses the filter to have pore sizes of from about 5-50um and is made of ceramic and /or PTFE. (Col. 6, lines 8-25). These properties and materials are recited in applicant's claims 5, 6, 7. It should be noted that applicant's disclosure refers to the diffusion membrane as also acting as a filtering membrane for bubbles and the filter of the reference functions in a likewise manner.

As for claim 38, Figure 3 of the reference appears to show the plating surface in "close proximity to the filter or "diffusion membrane".

If not shown by the reference, then the claims would be considered an obvious modification thereof, e.g., adjust the flow to provide a uniformity of plating across the substrate and/or position of the filter "diffusion membrane",

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because the reference shows controlling these properties to be factors in providing a improved deposit on the substrate.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 5-11, 23 and 40-60 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 5-6 are dependent on a canceled claim.

Claim 23 recites the word "type" which is considered to be indefinite. See *Exparte Copenhaver* 109 U.S.P.Q 118.

Claim 40 is dependent on a canceled claim. Claim 50 recites the limitation "compartment" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Allowable Subject Matter

8. Claims 12-22 and 24-37 are allowed.

9. Claims 8-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

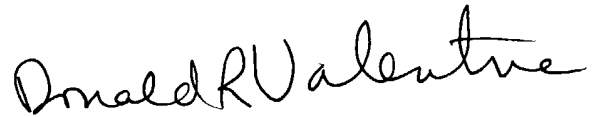
10. Claims 23 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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11. The following is a statement of reasons for the indication of allowable subject matter: The references of record do not show or suggest an electroplating cell with an aperture disposed in the cell such that a plating fluid from the aperture must pass through a diffusion membrane before contacting a workpiece, the apparatus has anode and cathode electrically connected to a potential applied to the respective anode and cathode, a diffuser membrane is between the anode and cathode and creates a flow pattern such that the plating fluid exits the diffuser membrane at substantially the same velocity across the entire surface of the diffuser and wherein there is an anode cup with the diffuser membrane covering the opening of the cup and where the cup and diffuser membrane define an anode compartment.
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald R. Valentine whose telephone number is 571-272-1250. The examiner can normally be reached on Monday-Friday 9:30-6:00.
- If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Donald R. Valentine
Primary Examiner
Art Unit 1742

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July 13, 2004